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DEVOTED TO AGRICULTURE, HORTICULTURE, AND RURAL ECONOMY.

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The Orchard, No. 6.

According to the report of a horticultural committee, there are not less than one hundred and fifty varieties of grafted apples cultivated in this State, (Indiana.) What number of these are grown in the neighborhood of Richmond is yet to be seen. I have already described twenty-three kinds, which, with those mentioned below, will make thirty-two varieties. But the catalogues of nurserymen of this vicinity extend considerably beyond this number; and I have found also, among our farmers, several kinds which are not enumerated by the nurserymen: some of these I have described, (the Nutlarge and Glass apple,) and how many more can be brought to light, by further enquiry, is still to be determined.

APPLES.

Michael Henry Pippin.

Size.—3 5-10 in. long; 3 2-10 in. wide.

Form.—Tapering towards the summit.

Pulp.—White, firm, smooth or slippery, juicy.

Color.—Greenish yellow, with a pale brownish red blush.

Surface.—Smooth, as if slightly greased. Dots large, numerous, brown, distinct, and acutely angled.

Flavor.—Sweet.

Stem.—8-10 of an inch long; even with the verge; stout.

Eye.—Open; in a considerable cavity; verge tubercular.

Ripens in 11th month, keeps well, and is a choice apple.

Golden Pippin.

(Not the English variety.)

Size.—3 3-10 in. long; 3 5-10 in. wide.

Form.—Somewhat smaller at the summit; rather rounded at the ends.

Pulp.—Whitish, tender, moderately juicy, granular.

Color.—Orange yellow.

Surface.—Dull. Dots dark brown, numerous, very large.

Flavor.—Sweetish, very pleasant, somewhat spicy.

Stem.—5-10 of an inch long, stout, not reaching the verge.

Eye.—Small, closed, in a small and rather shallow cavity.

Ripens in 11th month.

Seed cavities large, like those of the Bellflower. This is an excellent apple, and is sometimes called the Holland Pippin; but we have a much earlier apple under that name: I will, of course, endeavor to procure specimens for some future number of the *Orchard.*

White Pippin.

Size.—3 in. wide, 2 6-10 in. long.

Form.—Globular, rather rounded than flat at the ends.

Pulp.—Whitish, juicy, crisp, firm.

Color.—Rich yellow on the sun side, greenish yellow in the shade.

Surface.—Reflective. Dots brown, conspicuous, pretty numerous, and of medium size; those on the sun side mostly surrounded by a crimson areola.

Flavor.—Sweet, somewhat vinous.

Stem.—4-10 of an inch long, stout, not reaching the verge.

Eye.—Open, in a conical cavity of moderate depth.

Ripens in 11th and 12th months.

The tree bears abundantly, and the fruit keeps well till late in the spring. I have seen but few catalogues that contain this name; whether the apple is known under some other name the above description will perhaps enable the reader to determine. There is

perhaps nowhere a better fruit for stewing.

Winesap.

Size.—2 9-10 in. long, 3 1-10 in. wide.

Form.—Rather smaller at the summit.

Pulp.—Yellowish, firm, crisp, juicy.

Color. Dark suffused red, with faintly discoverable streaks.

Surface.—Reflective. Dots distinct, of middling size, distant, brown.

Flavor.—Musky, vinous, lively sub-acid.

Stem.—Moderately stout, even with the verge.

Eye.—Closed, in a moderate depression.

Ripens in 11th month.

It is a fine winter apple. The tree bears abundantly; its limbs are remarkably spreading and drooping.

Neverfail.

Size.—2 8-10 in. long, 3 3-10 in. wide.

Form.—Rather smaller at the summit.

Pulp.—Firm, juicy, greenish white.

Color.—Greenish ground, closely streaked with dull red.

Surface.—Reflective. Dots distinct, numerous, of middling size.

Flavor.—Pleasant, sub-acid, lively.

Stem.—8-10 of an inch long, stout, even with the verge.

Eye.—Closed, in a moderate cavity.

Ripens in 11th month.

Keeps a long time. The tree is very productive, and should be in every orchard.

Pennock.

Size.—3 in. long, 3 4-10 in. wide—but quite variable.

Form.—Moderately flattened at both ends, swelling out on one side at the base, so as to give the apple the appearance of leaning to one side.

Pulp.—Yellowish, firm, juicy.

Color.—Red suffused, and in faint streaks, and a greenish yellow ground apparent to a considerable extent.

Surface.—Reflective. Dots elevated, in the centre of large, remarkably conspicuous, pale brown areolæ.

Flavor.—Pleasantly sweet.

Stem.—5-10 of an inch long, stout, not reaching more than half way to the verge.

Eye.—In a broad, shallow cavity, open.

Ripens in 12th month, and keeps very long.

Vandevere Pippin.

Size.—3 9-10 in. wide, 2 9-10 in. long.

Form.—Much and nearly equally flattened at both ends.

Pulp.—Greenish yellow, coarse grained, juicy, firm, and brittle.

Color.—Greenish yellow ground, streaked with interrupted pencilings of red, with intervening frittered red.

Surface.—A little reflective. Dots large, light brown, distinct, equally distributed, rather distant.

Flavor.—Too acid for many palates, but agreeable to those who are fond of a tart apple.

Stem.—8-10 of an inch long, moderately stout, reaching the verge.

Eye.—Sunken to a moderate depth, very open.

Ripens in 12th month, or earlier.

Keeps well. The tree is productive. The seeds of this apple are unusually long.

Smith's Cider Apple.

Size.—2 6-10 in. long, 3 in. wide.

Form.—Slightly and nearly equally flattened at both ends.

Pulp.—Whitish, slightly tough, juicy.

Color.—Pale red, somewhat broken, and in faint streaks, on a reddish yellow ground.

Surface.—Somewhat reflective. Dots rather large, light colored, distinct, not equally distributed.

Flavor.—Peculiar, sub-acid.

Stem.—6-10 of an inch long, reaching the verge.

Fye.—In a broad and shallow cavity, remarkably expanded.

Ripens in 10th month.

Productive. I do not consider the flavor of this apple a desirable one.

Spitzenberg.

Size.—3 3-10 in. long, 4 in. wide.

Form.—Much flattened at both ends.

Pulp—Tender, juicy, yellowish, white.

Color.—Yellowish ground, with red streaks of variable depth of color, very short, and some nearly obliterated and frittered.

Surface.—Reflective. Dots hardly visible, very few, and minute.

Flavor.—Pleasantly sub-acid.

Stem.—3-10 of an inch long, moderately stout, not reaching more than quarter of the way to the verge.

Eye.—In a broad cavity, open.

Ripens in 11th month.

This is a good apple, and keeps well.

Will some one of the readers of the Farmer describe the *Swaar* apple, according to the scheme adopted in these numbers of the Orchard? There appears to be no apple *under this name*, cultivated in this section of Indiana, and I have not met with the name in any of the catalogues published in this state. Other apples, mentioned by Dr. Kirtland as not being found in Ohio, or being very rare, are in Indiana very common, if the name be a correct criterion.

J. T. P.

Richmond, Indiana.

From the Southern Planter.

Tobacco.

The undersigned, a committee appointed by the Agricultural Society of Powhatan, to whom was referred the subject, viz. "The best mode of managing tobacco, from the time it is cut in the field until it is carried to market," having had the subject under consideration, beg leave to present the following report as the result of their deliberations.

The plant being supposed to be matured and cut in the field, the first operation is the hanging on the sticks. We advise that it should be done with great care; that each plant be placed perpendicularly on the stick, with space sufficient to prevent one plant from coming in contact with another, it being a matter of importance to give each plant a sufficient space for free evaporation. The second operation is "scaffolding." Your committee advise that the sticks should be carefully removed to a scaffold, (which should always be near at hand,) taking great care that the plant shall not be bruised. The scaffold should be low, so that the tails of the plant may nearly reach the earth, it being considered highly important to have the radiation of heat arising from the earth at this season of the year, to aid in yellowing the plant. After it has remained thus crowded on the scaffold some two or three days, the sticks must be removed from one another at such a distance as to give the plant the benefit of free ventilation. How long it should remain on the scaffold, your committee cannot exactly advise, it being dependant on a variety of circumstances, which they feel at a loss to explain even to an experienced planter. The result of their experience is, that when the pith of the stock commences to contract, and the stems show a slight degree of contraction, and the margin of the leaves gives evidence of a slight degree of dryness to the touch, that then it is ready to be removed to the house. This mode is advised if it is desired to cure the plant a bright color. If it is desired to cure it a dark color, the same directions should be observed, with this exception, that, instead of crowding the sticks upon the scaffold, they should be carefully placed at intervals of about ten inches, the object being, obviously, to prevent the leaves on one plant coming in contact with those on another, a due regard being had to the size of the plant.

This brings us to the third operation, the "housings," as it is termed. The same particularity and care should be observed in housing as has been advised in the last operation, a departure from which would produce disastrous consequences. By all means avoid crowding, which done, produces "house-burn." By house-burn we mean that leaf which presents a red color, and dry, lifeless appearance. We believe that it is produced by heat, from two causes, crowding and excessive fire. There is a difference of opinion on this subject, and your committee are well aware of it too, even by experienced planters; but such is our conviction of its truth from close observation, that we will almost venture the opinion without the fear of refutation.

The fourth operation is by far the most important branch of the subject before them—the "firing." Your committee are well aware of the difficulty of removing old and established usages and opinions, and venture on this branch of the subject with great diffidence, as their plan will come in conflict with the usages and opinions of the oldest, most experienced, and respectable planters of our State. But the im-

portance of their opinions, (formed from experiment,) if true, both as it regards the economy of labor and fuel, (the latter article becoming so scarce in our part of the State as almost to deter the boldest from the cultivation of the plant,) emboldens them in the stand they have taken, and induces them to recommend the plan to their brother planters. The plan heretofore practised, and the general received opinion is, that it requires a great deal of fuel to cure tobacco, and give it that seasoning required to make it stand a voyage to a market. The plan which we recommend, we think, will produce this result with less than one half of that required by the old plan.

All that is requisite, is to evaporate the water and retain the oil and resinous matters. This accomplished, we should be satisfied. Your committee recommend that the fire should be commenced gradually, so that the heat, by degrees, should be uniformly diffused throughout the house, never, in the commencement, exceeding the warmth of a summer's sun. A greater degree of heat would prove injurious, seriously affecting the oily and resinous properties of the plant. Keep up this fire until the leaf (not the stem) is cured; then let the fires burn out—they should not be put out. It will then be left as dry as tinder. Let it remain until it gets in soft order, and then commence the fire again, as before directed, and continue it until the stem is cured so much as to leave it in a safe condition, taking care never to permit the tobacco to get in too "high order;" to correct which, should it occur, apply the fire as before directed. We are of opinion, that a greater degree of heat should never be applied than 110 or 120, Farenheit thermometer. A greater degree of heat would tend to evaporate the valuable property of the plant, it being borne in mind that all that is required is a sufficiency of heat to evaporate the water; any excess over that quantity must serve to encroach on the oily and resinous property of the plant. One of your committee, for four years, operating on this plan, has uniformly sold his crops for the best prices; and his crops, too, have uniformly been shipped, and no complaint has as yet been heard, (although particular inquiries have been made,) that his crops did not stand the voyage. We, therefore, recommend the above plan to our brother planters, as making more tobacco with less labor, and at least one-half of the fuel ordinarily used.

The tobacco supposed to be thoroughly cured, then comes the process of "striking," or taking from the sticks. We advise, that, during the month of December, all tobacco should be taken down in tolerable soft order, so that striking two plants together to free it from grit will not injure the tails. A bed having been prepared of planks, about twelve inches from the floor, place the plants down, lapping the tail about twelve inches, and leaving the buts on each side exposed, so that they can continue to dry, being careful to leave a space of eighteen inches between the bulks, to admit free circulation, and permit a man to pass between them; then cover it over with straw, *without weight*, as it strips easier—a weight causing the leaves to adhere.

The next process is "stripping." The tobacco is taken from the bulk into a stripping-room prepared for the purpose, which should be made close, and, with a stove, the warmth kept as uniform as possible. Your hands must be divided into assorters and tiers-up; and each assorter should separate the colors and lengths, and, when so separated, they pass to the tiers-up, who are required to tie it up in such number of leaves (say from six to eight) that in packing, they may be easily grasped and pressed by the hand, taking care to keep the colors separate and distinct, and also dividing the long and short of each color. The lugs should be bundled up in large bundles, without much regard to nicety.

The next process is the "straightening and boxing." The tobacco is taken to the packing-room, which we will suppose is well prepared with boxes, in number according to the amount of tobacco made, which we recommend should cube four feet six inches, with the lever attached to each. This size is thought best to give the packer room sufficient to pack with ease; a larger box would prevent the lever from acting uniformly on a larger surface. The packer takes his position in the box, and the bundles, after having passed through three or four hands, pressed by each and straightened, are handed to the packer, one bundle at a time, who lays it straight in the box. The box should be packed at least half full before any weight is applied with the lever, and when applied great care should be observed to avoid brushing by too much weight. Keep the colors and lengths in separate boxes. The lugs will not pay for the trouble of boxing, and we advise that they be packed in the hogshead, and prized as fast as stripped. The tobacco should remain in the boxes until it adheres together well; that period will bring the spring of the year; it should then be taken from the boxes for the purpose of getting in prizing order, and instead of the old plan of tying up with shucks, which is a very tedious operation, and the old plan of hanging on sticks drawn to an edge, which always tended to bend the stems, which when dry can never be straightened, we recommend a plan, the invention of one of your committee, (Wm. Old, Esq.) Two bundles of tobacco should be placed together, and immediately below the tie should be fastened by a string, and two other bundles placed likewise and fastened by the other end of the string, drawing the string tightly, and then laid over a stick, from ten to thirteen strings on each stick. The string made of ordinary cotton, sufficiently

strong to sustain the weight of four bundles of tobacco, should be twenty-two inches long, the end of each loop made into a running noose, and the heads of two bundles caught in each end; they are then hung up in the house with sufficient room between the sticks to prevent their coming in contact: let it remain until it gets thoroughly dry. In the month of March it will get in that order; as soon thereafter as a season offers, strike it down in prizing order, but if you should not be able to strike it in the month of March, and you cannot get a season without the aid of art—then dry it with a moderate fire, such as has been recommended in the curing, until thoroughly dry, and then be careful to strike it down the first season that offers; should you omit it, it will be necessary to dry it again, which should be avoided, as the oftener it is fired, and the longer it hangs up, the more loss is sustained in weight. The tobacco should be taken down on the sticks, "cooped" in a bulk, and at convenient seasons thereafter it should be again boxed in the same manner recommended in the first boxing, taking care to turn the edges of the bundles up, (they being flattened by the first boxing,) and put on as much weight as you can with the lever. It must remain in the boxes until you are ready to prize. The prizing in the hogsheads after this preparation is one of the simplest operations.

Additional.—The undersigned, one of the committee, agrees with his brother planters and members of the committee in the general views expressed by them upon the subject submitted for their consideration; but differing from them in one of the most important operations of preparing a crop for market, viz the curing, he conceives the object of the Society will be best accomplished by stating that difference. He does not know better how to communicate his difference of opinion, than by stating his own plan, which is as follows. He adopts the plan of the committee in the commencement, and continues it until they stop the fire the first time, at which time he increases his to a high degree, and continues it until the tobacco is cured or nearly so. By this plan, he has succeeded uniformly in procuring good prices, until the last two years, when the objection made by the buyers was not to the manner of curing, but of prizing. His tobacco has usually held out with the estimate whilst growing.

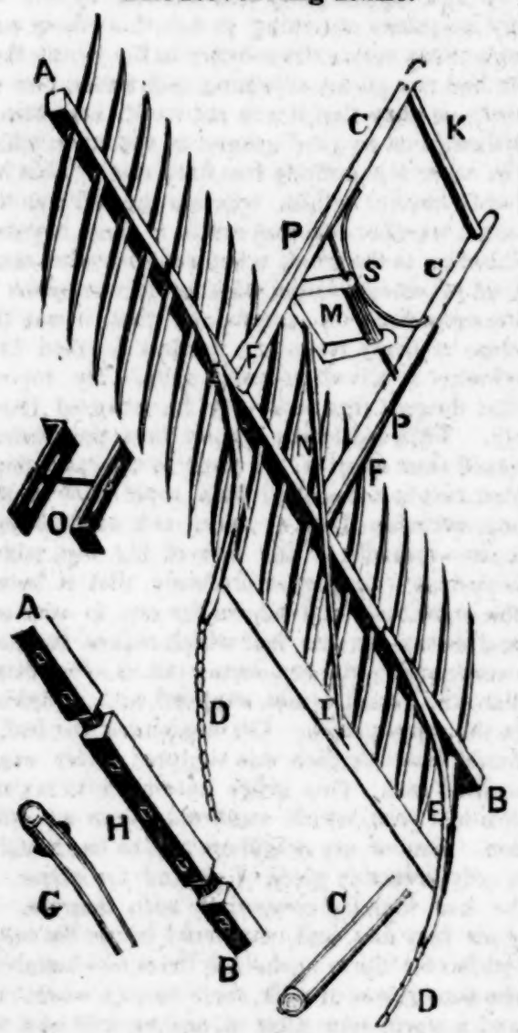
C. SELDEN.

Cause of Rust on wheat.

In examining several agricultural works, I have noticed many lengthy articles on the cause of rust on wheat, but none of them fully agree with my views of the cause. My views may be incorrect, as I have had little experience in wheat growing, but I think most of farmers will agree with me on reflection. A year or two ago, my curiosity was excited by one of my neighbors observing to me that there was something very extraordinary in his wheat, that he had two pieces adjoining each other, one of them so rusty that it was not worth harvesting, although on as good ground as the other, while the other was entirely free from rust. This led me to inquire of him whether the soil was the same, whether one was not in a more exposed situation to the wind, whether it was the same kind of wheat sown, whether it was sown at the same time. I ascertained that it was the same in every respect. At last I asked him whether it was all manured alike. He replied that the part that was rusty, he manured heavily. This led to the inquiry how the manure could thus affect it. I came to the conclusion that rust is occasioned by a rapid flow of the sap, occasioned by a warm rain on fresh manure—that affects the flow of the sap, which occasions it to flow so profusely, that it bursts the outer bark and allows the sap to ooze out and drives on the leaf which makes the rust, consequently the sap oozing out in every direction, the kernel is not supplied, and shrinking is the consequence. On examining the leaf, I found that the bark was ruptured under every spot of rust. One other case came to my notice last year, which confirms me in my opinion. One of my neighbors had as he thought, a very favorable piece of ground for wheat, as he had literally covered it with manure. It grew very fine, and two weeks before harvest it bid fair for thirty bushels to the acre—but about the time it was in milk, there came a warm rain and a warm sun after it. and as it is said, the rust struck it, and at harvest it was not worth cutting. Again you will generally see wheat rust the most where it has the most rapid growth—you will see it in rich sandy land—around stumps on new land, and on fire beds, where the timber has been burned, (if it is in the field at all.) It is frequently a foot taller than that which is not more than a foot from it. If it was any thing in the rain adhering to it, why would not the whole field be rusty, or even within one foot. Again, you will seldom see wheat rust in a cold dry summer, and small growth, when the bark does not burst before this time, when it is in the milk. I would not give a decided opinion, but it is probable that the sap is not as limpid while in milk as before, consequently, there would be more obstruction in the circulation, which would cause it to burst—that the straw near the head begins to dry and will not allow so rapid and abundant flow of sap. I would not advocate that land must be very poor to raise wheat; I would have it in good earth, and not sown to wheat under one or two years after a fresh coat of manure is put on.—*Central New-York Farmer.*

From the Albany Cultivator.

The Revolving Rake.



This is much more complex in its construction than the common horse rake, but possesses advantages over it in ease and expedition in raking. Its peculiar advantage is the facility with which it may be unloaded, requiring for this purpose but a slight elevation of the handles, and without stopping once in crossing the whole breadth of the meadow.

Its construction is as follows: The head, A B, is a piece of strong scantling, three inches square and ten feet long, through which eighteen holes, one inch square, are made to receive the teeth, which are pieces of the strongest white ash, one inch square and three feet long, projecting equally on both sides of the head when inserted, and forming a double row of teeth, each about eighteen inches long. The draught-chains or ropes, D D, are attached to the forward ends of two curved arms, E E, which are connected at their other ends to the head of the rake by iron straps passing round the head so as to allow it to revolve freely. G represents a portion of one of the curved arms, showing the hole formed by the iron strap, and H represents a part of the head which turns in this hole. These arms are held firmly together by the cross piece, I. An improvement in the curved arms is made by constructing them of two pieces at right angles, in a form similar to a carpenter's square, the first or shortest piece rising perpendicular from the head, and the other projecting forward, and to which the draught-chains are attached. By this construction more space is allowed beneath these arms for the collection of hay.

The cross rod K, connecting the handles C C, serves for guiding and managing the rake. These handles are connected to the head by a contrivance precisely similar to that of the curved arms. At the middle of the handles is a cross rod, P P, upon which turns the small frame M, which is connected by turning joints by means of the rod N, to the cross piece I. This rod must be of just such length as to cause the frame M, when pressed down upon the teeth by the handles, to touch them within about half an inch of their points; by this the teeth are pressed flat upon the ground while raking. To empty the load, this frame is raised by the handles beyond the reach of the teeth, and they pass it freely without touching. The rake is unloaded by means of the following contrivance. Outside of the handles, C C, are two pieces of wood, F F, turning freely upon the two projecting ends of the rod P P, as pivots, with their lower ends resting upon pieces of iron fastened crosswise on the head of the rake, just outside of the joints connecting the handles to it. The shape of these pieces of iron is shown in a detached view at O. When the handles are raised, the pieces F F are thrown forward on these pieces of iron until they strike the projecting part of them, when they immediately act as braces, and cause the rake to rise with the handles. The points of the teeth thus strike in the ground, and the horse continuing in motion causes the rake to make a semi-revolution, emptying the load, and throwing the back row of teeth forward to be filled as before. The handles, C C, should be perfectly parallel, that the pieces F F may play freely. S is a strong iron brace, fastened at each end to the handles, and at the middle to the cross rod P P.

The cost of this rake is about six dollars.

The revolving rake is better adapted for use on large farms and smooth meadows; and the common horse rake on small farms and rough meadows.

A Chicken Yard.

We have often thought that farmers would find it to their interest, to enclose a yard of suitable dimensions, with a high fence for the accommodation of their chickens. As managed at present, left as they are to range at will through the barn and stables, and lay their

eggs and set where they list, a very large proportion of their eggs are lost to their owners in the first place; secondly, fewer chickens are hatched out; thirdly, from having freer access to the dung heaps the young broods as well as the old hens often contract diseases, which they would escape were they kept in a proper yard, besides being less liable to be preyed upon by weasels, rats, minks, and other enemies.

In this yard, we would have two divisions; in one we would keep the roosters and laying hens; in the other, the hens with chickens.—Into this latter yard we would remove the hens and their young ones as they might be hatched out. The hens to be confined in coops so made as to protect them and their broods from the rain. In addition to these coops, the hens with chickens should be provided with an open shed, facing the south, in which they might be placed during long continued rains. Fresh water to be supplied in shallow troughs, twice a day, to the inmates of both departments of the yard. In each we would have a cart load of good sand, in which the fowls might dust themselves whenever they pleased. Besides this, we would have in each yard, a small heap of ashes as a preventive of vermin and a small quantity of lime to assist in digestion and the formation of the shells of the eggs. The house in the yard allotted to the laying and setting hens should be tight; but airy and sufficiently capacious to hold the fowls with comfort. Good roosts should be provided. In the formation of the nests, we would have them so constructed as to draw out, to facilitate the operation of cleaning. Always before setting a hen, we would have the drawer taken out, well cleaned, and whitewashed inside, which operation should be repeated as each hen hatches out her brood. The nest should be often renewed with clean hay or straw, and always before setting a hen. The old chickens should be regularly fed, twice a day in summer, and three times in winter, the young ones at least four times.

If it be objected against this plan, that it would take more to feed them than in the present one, we answer it is not so. At present the chickens are, or ought to be, regularly fed, the old ones once or twice a day, the young ones oftener. Besides this, they all have access to your stack yards, barn and stables, where they glut their appetites as often as they please. In our plan of feeding, you know what they really did consume as well as its cost: as it is you are completely in the dark on these subjects. Again it is known, that chickens, which have access to cattle in winter, are apt to generate lice upon them, and that cattle thus annoyed, do not thrive well. By our plan, this inconvenience and nuisance would be avoided.

If it be objected, that the ground appropriated to the chicken yard would be lost to culture, we meet the objection by a denial of its truth, and for the following reasons. For fifty hens and the requisite number of roosters, an acre of ground would be sufficient, and certainly no one will tell us that this number of fowls, with the range of the barn, stables, and adjacent fields, would not destroy, independent of their regular feed, more than the product of one acre of ground. But by our plan, the ground would not be lost to culture at all; for we propose to plant in the chicken yard say from forty to fifty apricot, plum, and damson trees, or a like number of other choice fruit trees, whose product, would pay for the rent of the ground ten times told. Placed in such a situation, we believe the trees named would hold and ripen their fruit, because from the natural, insectiferous propensities of the chicken, but few of those insects which prey upon the apricot and plum would escape their watchful eyes and all-devouring beaks,

A few words more and we are done. The hen house and shed should be cleaned out and white washed every spring, summer and fall.—*American Farmer.*

Cranberries.

Mr. Editor:—The natural history of the oxycoccus or cranberry is a subject for the curious, notwithstanding very little attention is paid to it where it is common, more than to trample over it and divest it of its luxuries at a season of the year when its fruit becomes perfect. The oxycoccus is a perennial plant, and belongs to the class Octandria, and to the tribe of Evergreens.—Like the pine, it sheds its leaves in the autumn of the second year from their formation. It naturally grows in wet swampy land, where the currency of the water nearly approaches to stagnancy, but will grow on a sandy or gravelly soil that is submerged during the cold months of the year, where it will, in wet seasons, often produce the most perfect fruit. The vines will creep, to the length of from one to six or more feet from the root, where they are not interrupted by mowing or otherwise, and cluster together and spread in beds like chamomile. The branch or shoot which produces the fruit is of annual growth, and does not start from the main vine until the weather becomes quite warm in May or June; the blossoms appear soon after the shoot commences its

growth, and continues to come out as the shoot progresses, until the shoot ceases to grow, which is about the last of July, so that the young cranberries are nearly half grown at the bottom of the shoot while the top is in full bloom.—The blossoms are of a light color, and generally appear the last of June or first of July. In 1836, they appeared the 7th of July; in 1838, the 21st of June, the season being more forward.

The cranberry is one of the most sensitive of plants, and is injured by the slightest frost any time from the starting of the new shoot until the fruit becomes ripe. The cranberries which grow upon the top of the shoot are about a month behind those which grow beneath on the same shoot; they are smaller, and seldom arive at maturity, the summer being so far advanced when they commence their growth they are liable to be injured by frost. On the last Wednesday of June, 1841, after extreme heat, there was a sudden shower of rain accompanied with hail, at the time the small cranberries were forming, and was followed by as sudden a change of weather, and a very slight frost in low and swampy lands, which spread the blight of death upon the new shoots and the promising crop, in many places for that year. Before the shower the vines were luxuriant and of a most healthy and flourishing appearance. After the shower the young vines changed from a green healthy state to a rusty brown color, and continued to fail until the spring of 1842, when they were apparently all dead, and as a consequence there were but few of the annual shoots and a corresponding crop of cranberries the season past. The cranberry, like all other fruit-bearing trees and shrubs, has its periods of growth, maturity, and decline. The same vines will not produce a crop every year while in their maturity, but like fruit trees will bear fruit once in two or three years, until they have produced from three to eight or ten crops, They produce much better and continue to bear much longer in some situations than they do in others, until the declining stage or old age overtakes them, when they gradually waste away until they entirely disappear, as though the ground were tired of their encumbrance, and the fertilizing quality exhausted which is necessary to their production. After the vines are decayed or dead, a renovation on the same spot has never taken place on my meadows, but they spring up in a capricious manner in different places, after exhausting their peculiar nutriment in places where they formerly grew. Twenty-four years ago, my meadow, which had produced large crops of grass, and where no cranberry vines were to be seen, has for ten years past yielded me the greatest crops of cranberries; so we see the natural tendency to rotation even among cranberries and meadow grass.

Cranberries propagate from the seed or from transplanting the vines taken up by the roots; the latter is probably the most expeditious course of bringing them to a bearing state, but my meadows having been amply recruited by a spontaneous growth, and my experience and observation so limited on the best mode of cultivation, that I shall submit the subject to some one more experienced than myself, to point out the best way. The most judicious course of treating the vines after they have arrived to a bearing state, has been a matter of considerable argument: some contend that mowing them off and keeping the vines short is the better method; others, that letting them extend themselves without molestation is the preferable way. I am inclined to favor the latter opinion, having paid some attention to their growth and productions for 24 years past. As far as my experience extends, I would advise delaying the operation of mowing or burning until the vines have entered the last stage or time of decay; then mowing them off or burning them superficially at a time when the ground is damp, that the roots may not be injured, and soon after the crop is taken off in August, will not be attended with much hazard, and a new set of vines will often succeed the old ones and prove quite as productive.

Formerly cranberry vines were dreaded and regarded as a nuisance, and when these unwelcome intruders, invaded the premises of a tidy farmer, he immediately waged war of extermination against them, commenced an attack upon them with fire and scythe, till they were extirpated, and a complete victory achieved. Cranberries have been one of the principal productions of the county of Middlesex for twenty years, and when the crop fails, as it has the last season, a very sensible lack is experienced in the funds of those who own the most profitable land—a good cranberry meadow. S. BROWN.

Wilmington, Jan. 10th, 1843.

DR. PLAYFAIR'S LECTURE.

Grazing and Fattening Cattle.

At the request of the Royal Agricultural Society of England, Dr. Lyon Playfair recently delivered two lectures before that Society, on the application of the principles of physiology to the grazing and fattening of cattle. By the kindness of our friends in London, we have been favored with reports of these lectures. The first was delivered on the 7th December, and we doubt whether we can occupy a page to better advantage than by giving this lecture to our readers.

Dr. Playfair stated that the object of the lecture was to point out in what manner the principles of physiology, especially those which had been lately developed by the chemical researches of Liebig, might be applied to the grazing and fattening of cattle. In the first place, he should endeavor to give a clear conception of what the principles of physiology were, that were involved in the feeding and growth of animals. Vegetables, in their growth, derive all their food from the mineral kingdom, principally from the air, which had been called a gaseous mineral; whilst animals derived their principal nutriment directly from the vegetable kingdom. Vegetables effected many chemical changes in the food they took up, but animals few. Gluten and Albumen are the nutriment principles of plants, and in chemical composition they are identical with the albumen of the white of an egg, of the muscle of an ox, or the blood of a sheep. By identity was not meant similarity, but positively the same thing. The albumen of blood, of muscle, and of an egg, differed in physical but not in chemical characters. Plants in fact contain within them the flesh of animals, and all the animal organization does in nutrition, is to put this flesh in the right place. But animals take up with their food other constituents of plants which contain no nitrogen; such as starch, sugar, gum, &c. These are not nutritive principles; they do not assist in making the flesh of animals; and when animals are fed on these alone they die. But animals possess a certain degree of heat, and their bodies have generally a temperature above that of the atmosphere—about one hundred degrees of Fahrenheit's thermometer: whence then comes this heat? From the burning of the sugar, starch, gum, &c. The air that animals expire is carbonic acid, the very gas that is produced by the burning of wood or charcoal in a fire. Charcoal is carbon, and animals take in daily a large quantity of carbon in their food. It is the burning or combustion of this substance in the body that produces animal heat. In hot countries, animals on this account take less carbon.—The food of the East Indian contains only about twelve per cent. of carbon; whilst that of the Greenlander contains seventy per cent. The depraved taste of the Greenlander, who drinks train oil and eats tallow candles by the dozen, might be pitied or wondered at—but it is necessary to his healthy existence. Another reason for animals acquiring carbonaceous food in cold climates is, that the air is more condensed, and the same measure contained a greater quantity of oxygen; that gas being the agent which, by uniting with the carbon and forming carbonic acid, gave out the heat. Strong exercise also demands a large supply of carbonaceous food, on account of the oxygen taken in during the hard breathing thus produced. Oxygen, when once taken into the system, never escapes uncombined, and would destroy the whole fabric of the body unless a fresh supply of material was given. Clothes, by keeping in animal heat, rendered less carbonaceous food necessary in order to keep the body up to its proper temperature. The following table exhibits the principles of food necessary for the two great processes of life—nutrition and respiration:

Elements of Respiration.	*Elements of Nutrition.*
Fat,	Vegetable Fibrine.
Starch,	" Albumen.
Gum,	" Casein.
Sugar,	Animal Flesh.
Wine,	" Blood.
Spirits,	
Beer.	

If it were not for some power or force in the animal fabric, it would soon become a prey to the chemical action of oxygen.—The force that withstands this action is vitality—a principle independent of the mind, and which constantly opposes the destructive chemical laws to which the body is subject.

Disease is the temporary ascendancy of the chemical over the vital force. Death is the victory of the chemical force. A dead body exposed to the action of oxygen is soon resolved into its primitive elements—carbon, hydrogen, and nitrogen, in the form of carbonic acid, ammonia, and water—and these are the elements from which plants again prepare materials for the living body. These remarks may explain many facts known to the agriculturist, and will assist him in insuring more certainly many of the objects of his labors. It is very well known that cattle do not fatten so well in cold weather as in hot. The reason is this: The fat is a highly carbonized substance, formed by the animal from its carbonaceous food. In cold weather the carbon in this food is consumed in keeping up the heat of the animal, which is at that season more rapidly carried off. This is also illustrated in an experiment made by Lord Ducie at Whitfield. One hundred sheep were placed in a shed, and ate twenty pounds of Swedes each per day; another hundred were placed out in the open air, and ate twenty-five pounds of Swedes per day; yet, at the end of a certain period, the sheep which were protected, although they had a fifth less food, weighed three pounds a head more than the unprotected sheep. The reason of this is obvious—the exposed sheep had their carbonaceous food consumed in keeping up their animal heat. Warmth is thus seen to be an equivalent for food. This is also illustrated by the fact, that two hives of bees do not consume so much honey when together as when separate, on account of the warmth being greater; and they have less occasion for consuming the honey, which is their fuel. Cattle, for the same reason, thrive much better when kept warm than when exposed to the cold. The cause of animals getting fat is, because they take in more carbonaceous food than they require for producing animal heat; the consequence is, that it is deposited in the cellular tissue in the form of fat. Fat is an unnatural production, and its accumulation is not necessary for securing the health of the body.

An instance is related of a fat pig having been kept without food for one hundred and sixty days, he having been kept alive by his own fat. Another element necessary to be taken into consideration in the fattening of animals, is motion or exercise. Every action of the body—nay, every thought of the mind, is attended with chemical change; a portion of the deposited tissue is thus being constantly consumed. It is on this account, that when animals are fattened, they are kept quiet and still. The cruel practice of fattening geese by nailing their feet to the floor, and of cooping pigeons and chickens before they are killed, arises from a knowledge of this fact. When prizes were given by our agricultural societies for fat, and not for symmetry animals were strictly prevented from taking any exercise at all. Mr. Childers found that sheep which were kept warm and quiet, fattened much faster than those that were allowed the open air and action. It is very difficult to fatten sheep and oxen in July, on account of the flies, which, stinging them, keep them in a constant state of motion.

The Cornish miners, on account of the laborious nature of their occupations, consume more food than the laborers with lighter work. During the late riots in Lancashire, the poor, unemployed operatives found out that cold and exercise made them hungry; accordingly they kept quiet in bed, and heaped upon themselves all the covering they could find. Englishmen in the East Indies are obliged to take a great deal of exercise, because they will insist upon eating and drinking highly carbonized foods; and the heat of the climate not allowing the escape of much heat from the body, they are obliged to take in by exercise the oxygen of the air, in order to destroy the carbon, which would otherwise accumulate in the system and produce liver disease. In the Scotch prisons, the quantity of food given to the prisoners is regulated by the kind of work on which the prisoners are engaged, the hardest workers having the most food. The reason of the flesh of the stag becoming putrid shortly after its death, arises from the quantity of oxygen which it takes into the system during the hard breathing of the chase. A hunted hare, for the same reason, is as tender as one that has been kept for a fortnight after being shot. The reason is the same. In both cases the action of the oxygen on the flesh produces approaching decomposition—in the one quickly, in the other slowly. Bacon, on the same principle, was at one time rendered more delicate by whipping the pig to death. Epileptic fits produce great emaciation, on account

of the violent action to which they expose the body.

Lord Ducie has performed some experiments highly illustrative of the foregoing general principles, and also indicated what might be expected from their application, the practice of grazing. 1st Experiment. Five sheep were fed in the open air between the 21st of November and the 1st of December; they consumed ninety pounds of food per day, the temperature of the atmosphere being about forty-four degrees. And at the end of this time they weighed two pounds less than when first exposed. 2d Experiment. Five sheep were placed under a shed, and allowed to run about at a temperature of 49 degrees; they consumed at first eighty-two pounds of food per day—then seventy pounds—and at the expiration of the time had increased in weight twenty-three pounds. 3d Experiment. Five sheep were placed in same shed as in the last experiment, but not allowed to take any exercise; they ate first sixty-four pounds of food per day—then fifty-eight pounds—and increased in weight thirty pounds. 4th Experiment. Five sheep were kept quiet, and covered, and in the dark; they ate thirty-five pounds a day, and were increased eight pounds. These experiments prove very satisfactorily the influence of warmth and motion on the fattening of cattle, and are still going on.

Advice on the care and management of Tools.

From a new edition of the Cabinet Maker's Guide, we quote the following:

The goodness of saws, chisels, and other edge tools, depends upon the quality of the steel, which should be uniform throughout, and it is always better to have them tempered too hard than too soft, for use will reduce the temper. If, at any time, you wish to restore the temper, and to perform the operation yourself, the best method is to melt a sufficient quantity of lead to immerse the cutting part of the tool.—Having previously brightened its surface, then plunge it into the melted lead for a few minutes, till it gets sufficiently hot to melt a candle, with which rub its surface; then plunge it in again and keep it there until the steel assumes a straw color, (but be careful not to let it turn blue,) when that is the case take it out, rub it again with the tallow, and let it cool; if it should be too soft, wipe the grease off and repeat the same process without the tallow, and when sufficiently hot, plunge it into cold spring water, or water and vinegar mixed.

By a proper attention to these directions, and a little practice, every workman will have it in his power to give a proper temper to the tools he may use.

If a saw is too hard, it may be tempered by the same means; if you are near a plumber's shop, you may repeat the process conveniently and without expense, when they are melting a pot of lead.

In other kinds of tools you must wait till the steel just begins to turn blue, which is a temper that will give it more elasticity and at the same time sufficient hardness.—*American Mechanic.*

The necessity of a change of Crops.

Messrs. Editors,—In a conversation the other day with an intelligent friend, I stated the remarkable fact, that if an animal were to be confined to one particular diet for a certain number of days, sickness and eventually death must be the consequence; when he immediately applied the *rationale* of the fact to a subject at once so highly interesting and natural, that I cannot help recording it. "Then," said he, "this shows at once the necessity of a change of food to the crop; or, which is the same thing, a change of crop to the soil—a *rotation of crops*, as it is called." Now in this little remark, a volume is thrown open to our perusal, and by studying it, I believe we may derive information and advantages at present unknown and unappreciated: and in return for the many useful hints and very pleasant ideas that I am continually reaping and garnering up from the perusal of the Cabinet, I offer the above, in grateful acknowledgement. [J. Dale, in Farmer's Cabinet.

☞ To soak Turnip seeds in fish oil is said to be a certain remedy against the fly.

From the American Sentinel.

The Dahlia.

I those charms alone can praise,
Which from constant nature rise.
DR. JOHNSON.

The Dahlia, so much and so deservedly in vogue here, is the most fashionable in England, and the extent of its culture, in some of the nurseries there, is astonishing; for besides its beauty and diversity of colors, it is in perfection at a season when the gardens are otherwise destitute of ornament. The roots are edible, though not agreeable.

This genus was named Dahlia, in honor of Andrew Dahl, a Swedish botanist, author of *Observationes Botanica*, by M. Cavanilles, who in his *Icones et Descriptiones Plantarum*, describes three species: the *superflua*, or fertile-rayed, with varieties; the *frustranea*, or barren-rayed, also with varieties; and the *coccinea*, or scarlet-flowered. It belongs to the class *Syngenesia Polygamia Superflua*, the Linnæn system, and to the Corymbiferæ of Jussieu's.

The leading varieties of the fertile-rayed species are the purple, rose, pale, white, sulphur, yellow, tawny, copper, brick-red, pomegranate, dark-purple, very dark, and lilac flower, single, semi-double, and double, with innumerable sub-varieties.

Of the barren-rayed species, which has not sported so much as the other, there are the scarlet, bright-scarlet, orange, saffron, and yellow-flowered, single, semi-double, and double, with several sub-varieties.

The roots of the Dahlia are tuberous and fasciulated, (with the knots collected in bundles as in the Ragunculus;) the stems rise from five to eight feet, covered with large compound leaves, resembling those of the compound dwarf Elder, and with side branches bearing numerous flowers of a great variety of colors, which appear in August, and continue till they are destroyed by frost.

The plant grows wild in Mexico, in sandy meadows, and was sent to Madrid in 1789, whence it was propagated in various parts of Europe, and by that route reached this country.

The plant of a good Dahlia is short, stiff, and bushy; prolific in flowers, with short peduncles, and the flower is well expanded, standing boldly to the view, with colors clear and distinct.

For ordinary purposes it is propagated by dividing the roots, and by cutting and grafting; and for new varieties, and for increasing the stock, by seed, as the seedlings flower the first year. In dividing the root, a bud must be preserved to each section, otherwise the tubers, though they throw out roots, will not produce leaves. The cutting should be taken from the root shoot in the spring, or from the top of the young shoot early in summer; and the lower end cut smoothly off in the middle of a joint, and the leaves, except those that would be buried in planting, should remain thereon. It should be planted in warm, sandy earth, and covered with a hand glass, and it will then strike and produce both flowers and tubers before autumn. Grafting is a mode of propagating herbaceous vegetables which has been practised for some time in Europe.

The cutting intended for the graft should be strong, short-jointed, and have on it one or more joints or buds; and ought to be procured as soon in the season as possible; and a good tuber that has no eyes should be selected of a single sort; and a slice from the upper part of the root must be cut with a sharp knife, and at the bottom of the part so cut, a ledge should be made for the graft with a joint at the lower end to rest upon, in order to keep it fixed in the place. The scion must be next cut slopingly, so as to fit; and after the graft has been tied, a piece of fine clay should be put round it, and the root placed in a pot of a size that will allow the graft to be buried half way in fine mould. The pot must then be placed on a little heat in the front of a cucumber or melon frame, and in about three weeks, if it be too soon to plant it in the border, the root should be put in a large pot to afford facility to its growth, supposing the operation be commenced in March, till the proper season of planting out, which does not arrive before the end of May. (Hort. Trans. Vol. IV. 476, details of Blake's practice, by whom the mode was first adopted.)

If by seed, the seeds should be collected in September from dwarf plants, where no preference rests on other accounts, and from semi-double flowers when double varieties are chiefly desired. Perhaps seeds obtained from those particular florets of the disc which have altered their form, may have a greater tendency than others to produce plants with double flowers. They should be sown in March, or earlier, on a heat of fifty-five or sixty-five degrees; the young plants pricked out, if necessary, in pots, and kept in a moderate temperature, say from fifty to fifty-five degrees, till the end of April, when they should be planted out where they are to remain, each plant to be covered at night with an empty pot for some weeks to avoid injury from spring frost.

Salt vs. Worms.

A friend who raises many vegetables for this market, tells us he always strows salt over his grounds to destroy the worms. Cabbages are always liable to be destroyed by them, and if half a spoonful of cheap salt should be placed near each cabbage plant it would prove a terror to these evil doers. Boston Cultivator.

From the Farmer's Cabinet.

Subsoil Cultivation

Sir:—I am an old man, an old farmer; but my eyes are not so dim, but I can see that there is much to learn in the way of a profession that has hitherto been considered either too high or too low—*which* I cannot say—to admit of much advantage from observation or reflection; indeed it is plain that we shall be distanced in the race of improvements that is taking place around us, in farming, as well as in any other science. But the subject that has awakened me to new life and fresh vigor, even in my old age, is, the cultivation of the subsoil, by means of moving it by such an instrument as that of which you have given us a drawing in your last, the Deanston Plough; and for the first time in my life, I regret that I was born, so soon by 20 years. Why, Mr. Editor, I can see with half an eye that the thing will work, and can fully understand how that the operation must be beneficial for a sandy, as for a clay soil, much of the former, as well as of the latter, having a retentive subsoil, which operates in a two-fold way to the injury of the crop, first, in wet weather, as preventing a glut of water from passing away, until it has become putrid poisonous to vegetation, and next, in a time of drought preventing the descent of the roots of the plants in search of moisture, which is ever present, even in the driest seasons, within a given distance of the surface of the earth, and where, as you say, they go for water, which by their tap roots is *pumped up* to the lateral roots, while busily engaged in search of food in the surface soil—a pretty idea, that, and worth many times the subscription money of the Cabinet.

To a want of deep ploughing might be attributed, I have no doubt, the weakness of our wheat-crops, which are so liable to be prostrated by any little gust of wind, after it has shot into the ear, and often, indeed, before that period.—With a strength, equal in appearance to any vicissitude of climate, we find our crops ready to fall by their own weight, and wonder that with straw oftentimes like reed, they have the substance only of the common grasses. This is the cause, depend upon it, and it is but natural that it should be so, for I have long considered the tap-root of a plant—and which even wheat is furnished with—to act the part of an anchor, and the lower and deeper this is cast, the greater will be the power of resistance; while the seeondary purpose which it serves, that of "pumping from below the moisture that is to serve as drink, to the food which is collected by the lateral roots in the surface soil," is new to me, and finishes the picture admirably. I consider, therefore, the operation of sub-soil ploughing the "ne plus ultra," as the blacking makers say—of successful agriculture, and have great hope that by its adoption, one-half, at least, of the evils attending the cultivation of the wheat-crop will be obviated; possibly the blight and rust, and even the Hessian fly, and especially *the lifting of the crop by frost.*

From the Journal of the Royal Agricultural Society.

Experiments on Nitrate of Soda and Saltpetre.

BY W. STRATFORD DOUGDALE, M. P.

Many communications have been forwarded to the society on the value of saltpetre and nitrate of soda as manures: perhaps the result of an experiment I have made upon two fields of wheat, eight miles distant from each other, may not be uninteresting. One field is of a light gravelly soil, which was manured with a coat of marl in the autumn before the wheat was sown. The other field is of a stiff clayey soil, and was manured with lime in the autumn.—About the middle of last April I measured off three quarters of an acre in the field of gravelly soil, and sowed one quarter with saltpetre, one with nitrate of soda, and left the remaining quarter with nothing but the marl.

I also measured off four quarters of an acre in the clayey field, and sowed one quarter with saltpetre, one with nitrate of soda, one with soot, and left the

remaining quarter with lime only. In both cases the quantity of saltpetre and soda was as one hundred weight to the acre. In the gravelly field the produce of the quarter of an acre with nitrate of soda was, of—

Wheat..... 13 bu. 2 pks, weighing 63 2-3 lbs per
Straw..... 9 cwt. 72 lbs. [bush.
Chaff and waste. 2 qrs. 24 lbs.
Saltpetre,—
Wheat..... 10 bu. 2 1-2 pks, weighing 64 1-4 lbs
Straw..... 8 cwt. 56 lbs. [per bush.
Chaff and waste. 3 quarters 24 lbs.
Marl only,—
Wheat..... 10 bu. 2 pks, weighing 64 lbs. per
Straw..... 8 cwt. 54 lbs. (bush
Chaff and waste. 1 cwt.

In the clayey field:—The produce of half an acre, manured with—

Nitrate of soda, wheat ..... 18 bush. 1 peck, weighing 64 per bush.
Do. with saltpetre ..... 17 bush. 2 pecks, weighing 63 per bush.
Do. with soot ..... 17 bush. 1 peck, weighing 63 7-8 per bu.
Do. with lime only ..... 16 bush. weighing 62 2-3 lbs. per bush.

In this experiment my bailiff did not measure the quantities of straw and waste.

I also sowed some soda and saltpetre, to the same amount per acre, on some grass-land.

I was not at home when the hay was cut; but am informed that the crop was greatly increased, particularly by the nitrate of soda.

From the Farmer's Cabinet.

Sugar Beet for Spring Feeding.

Sir,—I have for a long time been halting between two opinions, as to the value of the sugar beet as winter food for stock, and really have been puzzled with the conflicting testimony of parties, for and against. A visit to a friend in an adjoining state, which I have been induced to take at the suggestion of your correspondent at page 206 of the Cabinet for January, and whom I can bear out in the remark, that such a mode of expending a small sum is the cheapest and best way in which a man can study the science of agriculture, has, however, brought me short about, a strong advocate for its cultivation, and I will tell you why.

Before I left home I was wondering with myself, how my poor stock were to subsist another month without a supply of fresh provender: my hay-barn and corn-crib began to show signs of atrophy, the ribs of the latter rattling in the wind like a dried skeleton; with scarcely a blade of grass to be seen in the pastures, into which, however, I had been compelled to turn the poor creatures, in the hope that they might be able to pick up a little to help out: knowing all the while, that what they could extract from the roots of the sod must be at the expense of the coming crop of hay. In this state of mind and feeling, I reached my friend's house, and was infinitely surprised to find him feeding all his cattle and sheep, and indeed I might add hogs which also came in, for a share, to the full hood as he termed it, with sugar beet, which he had reserved for this particular season, as a link between the winter and summer crops, the value for which purpose, to use his own words, was "quite above all price." Said he—"while many are debating about the quality of the beet, and are not able to determine whether its cultivation be the greatest good or the most considerable of evils, I have gone quietly on, sowing regularly the quantity necessary for my winter consumption, being careful to preserve a full supply for the whole month of April, without regard to the stories that are told about its different and very dissimilar properties; and now you see me with plenty of food for every living thing about me for a month to come, obtained at a most trifling cost of production; for, from about an acre of land, I harvested a mountain of green food, to mix with my hay and straw, which have now become dry and hard from keeping: and by these means I am able to keep all my stock from the meadows and pasture until May—a perfectly incalculable advantage; for thus I am not only feeding them this year, but adding astonishingly to my means for the next winter, as I almost fancy that by so doing I am able to mow double the quantity of hay that I used to do. And this is not all; for the large quantity and excellent quality of the manure which I thereby obtain, is of far more value to me than all the labor and expense of cultivating the beets, twice told. You see that my

stock are in good condition, contented and happy, confined to their winter quarters, and not permitted to roam abroad, to the destruction of the fences, the loss of their dung, and the absolute annihilation of the future crops of hay; and if these are not advantages sufficient to induce us to go forward with the cultivation of the beet, I should be glad to be told what more we have a right to expect. Let others argue what is the value of such a crop for winter food, and especially for spring use, while I am too happy to be able to create a summer amongst my stock during the most dreary winter, and preserve my spring crop of grass, by the very trifling devotion of about a single acre of land to their cultivation. I repeat—my extra manure pays me for all my extra expense; and my peace of mind is above all price."

I thought of my poor starving animals at home, and shortened my visit, that I might return and be prepared to practise the doctrine which my friend had been preaching. JOHN LACY.

Editorial Items.

We have received from the Editor, Mr. C. W. Elliott, a copy of the first number of the Pomological Magazine. We bespeak for it an extensive circulation. It is an 8vo., got up in a very superior style—each number having five handsome engravings illustrative of our orchard fruits, with each of which there is the necessary letter-press description.

It is published by U. P. James, 26 Pearl Street, Cincinnati. Terms $2,00 per year.

American Agriculturist.—We have great pleasure in witnessing the successful career of this periodical. The known talent of the Editor, Mr. A. B. Allen, and the extraordinary facilities possessed by him, could not but assure a large circulation to any paper under his especial control. Each number continues to have additional interest, and the illustrations of the work are all the while progressively improving.

Dr. Dana's Muck Manual for Farmers.—This work we have read with great interest, and unhesitatingly recommend it to the notice of the agricultural community; indeed no farmer ought to be without it. The clear and intelligible manner in which it is written, the simple yet explicit style in which each explanation is made, renders it more peculiarly adapted to the use of the class of persons for whose benefit it is especially published than any other work embracing the science of agricultural chemistry.

Our friends of the Nashville Agriculturist have our thanks, for their kindly notice and friendly views. We shall have great pleasure in reciprocating the same, should it be in our power; nor shall we easily forget the warmth with which that friendship was exemplified upon our recent visit to the "City of Rocks."

We are in receipt of a new agricultural paper, named "The Mississippi Valley Farmer," published at St. Louis, by J. Libby, formerly connected with the Farmer's Cabinet. Mr. Libby's previous experience will no doubt enable him to sustain his undertaking with spirit and judgment, and we bespeak for him an extensive circulation.

From the New England Farmer.

Canker Worm.

Raising Fruit is of first rate importance among objects pursued in procuring the pleasures of taste and the real comforts of life.

Riding in the car from this city to Worcester, I could not without pain look on the apple trees, stript of their agreeable foliage, and attired in the badges of desolation. I am confident this intrusion of an unsparing enemy may be easily and promptly resisted at the threshold. I will venture myself at the straits of Thermopylæ, and sus-

tain an onset from the whole posse comitatus.

Now, brother farmers, I have tried some experiments, and find those which consume the least time and produce the greatest effect are most to be prized. How long do you think it will take you to fix a syringe of convenient calibre to exercise with most adroitly? Now, when you have done this, place yourself on the windward side of an apple tree, and dip the proboscis of your syringe into a bucket of water saturated with lime, and discharge the contents into the air so that they may fall upon the leaves, and the whole enemy will immediately decamp, leaving the rightful owner in quiet possession. I have tried the experiment on various worms that invade the trees, and have not known it fail of producing an expulsion.

It is extremely probable, that a decoction of tobacco, or any powerful narcotic, or bitter substance, will be attended with the same result.

From the Boston Cultivator.

Science of Agriculture.

The great bar to agricultural improvement, is the degrading idea which too many entertain, that every thing denominated science is either useless in husbandry or beyond the reach of the farmer; whereas the truth is, much, very much that is useful, is attainable by those advanced in life, and almost any thing by the young, who will adopt the proper means to obtain it. What is science? Johnson defines it—"Knowledge—certainty grounded on demonstration—art attained by precept, or built on principles." The adventurous marine will tell you, that it is science which enables him to traverse every clime and every sea with facility and comparative security. Science has contributed essentially to improve every art and branch of industry which administers to the wants of man. It makes us acquainted with the nature of vegetables, of animals, of minerals, and mixed bodies; of the atmosphere, of water, of heat, and light; as connected with agriculture, agricultural implements, and other mechanical agents, and of agricultural operations and processes. Established practices may be imitated by the veriest dolt; but unless he is instructed in the reasons upon which these practices are founded, he can seldom change or improve them.

Intellect is the gift of the Creator; talent is the fruit of culture. The certain way of obtaining knowledge in science, is to be impressed with the necessity of possessing it, in order to prosecute one's business to better advantage. "All may not acquire by the same degree of labor or study, the same degree of eminence; but any man by labor may attain a knowledge of almost all that is already known in his particular business."

Great men spring from no particular class; they rise from the humble as well as from the higher ranks of life.—Franklin was a printer, Washington a farmer, Sherman a shoemaker, the elder Adams a schoolmaster, Rittenhouse a ploughman, Ferguson a shepherd, Herschell a musician; and these all shone conspicuous as philosophers or statesmen. All young men who wish to become respectable, or excel in agriculture, should be impressed with the necessity of obtaining knowledge in the science of agriculture, i. e. of knowing how things are best done, and why being so done they are the best done; should resolve to obtain this knowledge; and these two things being premised, there is little doubt of success, at least to a respectable and highly gratifying extent; for "knowledge, like wealth and power, begets the love of itself, and rapidly increases the thirst of accumulation. Science is not the Calypso, but the Mentor of agriculture — the stimulant to prudence and industry, rather than a lure to indolence and sloth.

END OF VOL. III.